DATASHEET - FRCMM-40/2/003-A



Residual current circuit breaker (RCCB), 40A, 2p, 30mA, type A

FRCMM-40/2/003-A

Powering Business Worldwide

FRCMM-40/2/003-A Part no. Catalog No. 170432

Alternate Catalog

EL-Nummer (Norway)

1666328

Similar to illustration

Delivery program			
Basic function			Residual current circuit-breakers
Number of poles			2 pole
Application			Switchgear for industrial and advanced commercial applications
Rated current	In	Α	40
Rated short-circuit strength	I _{cn}	kA	10 with back-up fuse
Rated fault current	$I_{\Delta N}$	Α	0.03
Туре			Type A
Tripping		s	non-delayed
Product range			FRCmM
Sensitivity			Pulse-current sensitive
Impulse withstand current			Partly surge-proof 250 A
Contact sequence			T IN H

Technical data

Built-in width

Electrical			
Types conform to			IEC/EN 61008
Current test marks			As per inscription
Tripping		s	non-delayed
Rated voltage according to IEC/EN 60947-2	U_{n}	V AC	240
Rated frequency	f	Hz	50/60
Limit values of the operating voltage			
Test circuit		V AC	184 - 250
Rated fault current	$I_{\Delta n}$	mA	30
Sensitivity			Pulse-current sensitive
Rated insulation voltage	U_{i}	V	440
Rated impulse withstand voltage	U_{imp}	kV	4 (1.2/50μs)
Rated short-circuit strength	I _{cn}	kA	10 with back-up fuse
Impulse withstand current			250 A (8/20 µs) surge-proof
Max. admissible back-up fuse			
Short-circuit	gG/gL	Α	63
Overload	gG/gL	Α	40
Rated making and breaking capacity / Rated residual making and breaking capacity	$I_m/I_{\Delta m}$	A	500
lifespan			
Electrical	Operations		≧ 4000
Mechanical	Operations		≧ 20000
Mechanical			
Standard front dimension		mm	45
Device height		mm	80

mm

35 (2TE)

Mounting		Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715
Degree of Protection		IP40, IP54 (with moisture-proof enclosure)
Terminals top and bottom		Twin-purpose terminals
Terminal protection		Busbar tag shroud to BGV A3, ÖVE-EN 6
Terminal cross-section		
Solid	mm^2	1.5 - 35
Stranded	mm^2	2 x 16
Terminal cross-section		M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, Pozidriv PZ2)
Tightening torque of fixing screws	N/m	2 - 2.4
Thickness of busbar material	mm	0.8 - 2
Admissible ambient temperature range	°C	-25 - +40
Permissible storage and transport temperatures	°C	-35 - +60
Climatic proofing		25-55°C/90-95% relative humidity according to IEC 60068-2
Mounting position		As required
Contact position indicator		red / green
Trip indication		white / blue

Design verification as per IEC/EN 61439Technical data for design verification

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	40
Heat dissipation per pole, current-dependent	P _{vid}	W	3.9
Equipment heat dissipation, current-dependent	P _{vid}	W	7.8
Static heat dissipation, non-current-dependent	P _{vs}	W	0
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
			Starting at 40 °C, the max. permissible continuous current decreases by 3% for every 1 °C
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed. $\label{eq:continuous}$

Technical data ETIM 7.0

Circuit breakers and fuses (EG000020) / Residual current circuit breaker (RCCB) (EC000003)

Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / Residual current circuit breaker (RCCB)

Rated voltage V 240 Rated current A 4 40 Rated fault current mA 30 Rated insulation voltage Ui Rated insulation voltage Uimp V 440 Rated impulse withstand voltage Uimp V 4 Mounting method I N 7 1 Related ge current type A 7 1 Selective protection No No Short-circuit breaking capacity (lcw) NA 10 Surge current capacity Reveal of the sale of	(ecl@ss10.0.1-27-14-22-01 [AAB906014])		
Rated current Rated fault current Rated insulation voltage Ui Rated insulation voltage Uimp Rated impulse withstand voltage Uimp Mounting method Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (lcw) Short-circuit breaking capacity (lcw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth A 4 40 40 40 40 40 40 40 40 40	Number of poles		2
Rated fault current Rated insulation voltage Ui Rated insulation voltage Uimp Rated impulse withstand voltage Uimp Mounting method Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth mm 30 440 440 440 440 440 440	Rated voltage	V	240
Rated insulation voltage Uinp Rated impulse withstand voltage Uimp Mounting method Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Short-toure capacity Short-toure capacity Short-toure capacity Short-toure capacity Short-circuit breaking capacity (Icw) Short-toure capacity Short-circuit breaking capacity (Icw) Sh	Rated current	Α	40
Rated impulse withstand voltage Uimp Mounting method Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth MV A	Rated fault current	mA	30
Mounting method Leakage current type Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth DIN rail A A A A BIN rail A A Po No No Short-circuit breaking capacity (Icw) No No No Short-circuit breaking capacity (Icw) No No Short-circuit breaking capacity (Icw) No No Short-circuit breaking capacity (Icw) No No No Short-circuit breaking capacity (Icw) No No No Short-circuit breaking capacity (Icw) No No No Short-circuit breaking capacity (Icw) No No No Short-circuit breaking capacity (Icw) No	Rated insulation voltage Ui	V	440
Leakage current type Selective protection Short-time delayed tripping No Short-circuit breaking capacity (Icw) Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth A A A A A B B A B B A B B	Rated impulse withstand voltage Uimp	kV	4
Selective protection Short-time delayed tripping No Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth No No No No No No No No No N	Mounting method		DIN rail
Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth No No No No No 10 PA 10 PS 50/60 Hz Yes Yes Yes Yes Pg 10 10 10 10 10 10 10 10 10 1	Leakage current type		A
Short-circuit breaking capacity (Icw) Surge current capacity KA 0.25 Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth KA 10 LEA 10 10 10 10 10 10 10 10 10 1	Selective protection		No
Surge current capacity KA 0.25 Frequency 50/60 Hz Additional equipment possible Yes With interlocking device Yes Degree of protection (IP) IP20 Width in number of modular spacings 2 Built-in depth mm 70.5	Short-time delayed tripping		No
Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth 50/60 Hz Yes Yes Yes 2 Built-in depth 70.5	Short-circuit breaking capacity (Icw)	kA	10
Additional equipment possible With interlocking device Ves Degree of protection (IP) Width in number of modular spacings Built-in depth Yes IP20 mm 70.5	Surge current capacity	kA	0.25
With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Yes IP20 2 Built-in depth mm 70.5	Frequency		50/60 Hz
Degree of protection (IP) Width in number of modular spacings Built-in depth IP20 70.5	Additional equipment possible		Yes
Width in number of modular spacings 2 Built-in depth mm 70.5	With interlocking device		Yes
Built-in depth mm 70.5	Degree of protection (IP)		IP20
	Width in number of modular spacings		2
Ambient temperature during exercising	Built-in depth	mm	70.5
Animent temperature during operatury	Ambient temperature during operating	°C	-25 - 40
Pollution degree 2	Pollution degree		2
Connectable conductor cross section multi-wired mm ² 1.5 - 16	Connectable conductor cross section multi-wired	mm²	1.5 - 16
Connectable conductor cross section solid-core mm² 1.5 - 35	Connectable conductor cross section solid-core	mm²	1.5 - 35

Dimensions

